YOUR NEWSLETTER WITH THE LATEST IN RADIATION PROTECTION

THE RADCO REGISTER

A CECOM RADIATION PROTECTION NEWSLETTER FOR THE US ARMY NATIONAL GUARD

VOLUME 10, No. 3 JULY 2000

NEWS FLASH

DOW & NASDAQ

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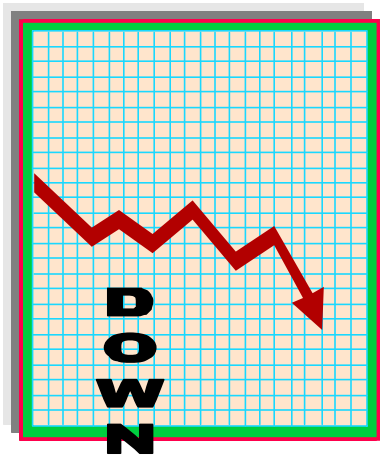

RADIATION SAFETY PROGRAM COMPLIANCE

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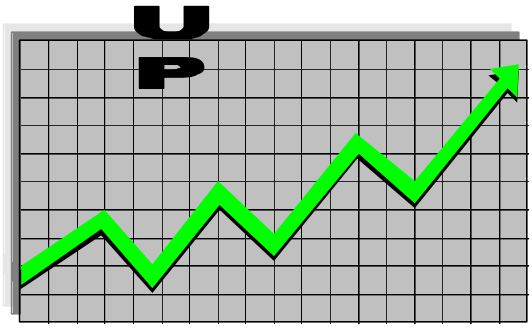

....other news inside

YOUR STATE and LOCAL RADIATION SAFETY OFFICERS (RSO): (fill-in)

SRSO:_____ **Phone:**_____

ASRSO:_____ **Phone:**_____

LRSO (CSMS):_____ **Phone:**_____

LRSO (USP&FO):_____ **Phone:**_____

LRSO (MATES):_____ **Phone:**_____

LRSO (AASF):_____ **Phone:**_____

IN THIS ISSUE:

The distribution and content of this newsletter is directed to Army National Guard activities for which the U.S. Army Communications - Electronics Command (CECOM) Directorate for Safety, Radiological Engineering Division, serves as Radiation Safety Staff Officer. This newsletter is a periodic publication summarizing the activities of the National Guard Bureau and CECOM for the previous months including any current radiation safety issues. The primary distribution of this newsletter is to State Radiation Safety Officers, USP&FOs and CSMSs, with local reproduction encouraged.

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ON GUARD...

ARNG Occupational Health In-Service Conference..... A BIG SUCCESS!

During the first week of May, we had the privilege of participating in the OHN In-Service Conference held in Sparks, NV. We gave a briefing that summarized the status of the ARNG Radiation Safety Program (RSP) as well as some RSP initiatives that are being worked.

Most noteworthy is the fact that the State RSPs show an improved compliance level of 87%, compared to 55.5% previously. That means that out of 30 evaluations performed last year, 26 were compliant. WOW!! We would like to say "JOB WELL DONE" to all of you that are contributing to the success of the RSP within your state.

Some of the handouts provided at the conference included a copy of the new ARNG inspection checklist (also available at our web site), the SPBS–R software system used to generate a radioactive commodity inventory, and copies of the response test procedures for the AN/PDR-77 and AN/VDR-2 RADIAC meters. If you weren't at the conference but can use any or all of these handouts, give us a call.

As always, feedback from the attendees was welcomed and plentiful. The majority of your comments centered on training course offerings and the need to schedule our courses as early as possible. As indicated, we are going to try to schedule all of the courses for FY 01 prior to the start of that year.

Also, for those of you who did not receive a copy of our most recent video on the subject of Nonionizing Radiation Radiofrequency Leakage, previously distributed by the ARNG Multimedia Group to all OHNs, we ask that you check to make sure that it wasn't accidentally misplaced on a shelf or in a drawer and overlooked. If you still can't find it and would like a copy, give us a call.

Thanks again for the invite and to all you RSOs out there……keep up the great work!

Overdue M43A1 and CAM Leak Tests.... A READINESS Issue!

You've got a pretty good radiation safety program…RIGHT? Well, maybe so, but we know one thing that might cause you to get gigged on your next program evaluation. What is it, you ask? It's something we've been finding more of lately. No, it's not surveys. No, it's not dosimetry records. Let's try what's behind door #3….it's leak tests! Yes, that's right Monty, leak tests. Do you have any that are overdue?

As you know, TACOM-Rock Island's NRC License 12-00722-06 requires an annual leak test for all M43A1s and CAMs….and there's no trading for what's behind the curtain on this one! Any items that are overdue for their annual leak test means you have a non-compliance situation. There is no 3% leeway as is allowed for most maintenance items.

We know what you CSMS guys are saying: "We send each unit a monthly reminder to get them turned in, so what can I do to resolve a situation like this?" Well…, keep playing along and we'll tell you.

For starters, the State Radiation Safety Officer needs to ensure that unit personnel realize the importance of getting these items in to the CSMS for their annual leak test. I know most of them don't think about license compliance, but what about unit readiness? Remember, these items are non-mission capable if they are overdue for their annual leak test.

Also, you guys at the CSMS need to stop giving the field so much leeway. If during your review of the "Delinquent Items" list, you notice that there are several M43A1s and CAMs on the list, it's time to elevate the problem. Report it through proper channels to the Surface Maintenance Manager. Explain the situation and seek their assistance in resolving the issue with the Troop Commander.

Are you finding that some of the items have been transferred or turned in and you weren't notified? Well, to resolve this problem, we recommend that at least once annually, you go to the Serialization Officer at the USP&FO and ask them to print a list of M43A1s and CAMs within the state. Compare this to the listing generated by your TIMMS program and resolve any discrepancies.

Now that you know we've been uncovering this problem, check it out. We'd rather you resolve the situation prior to our arrival rather than after our outbrief with your Adjutant General! Thanks for playing along and don't say we didn't warn you….. and now we have some lovely parting gifts for you!!

AN/UDM-2, Whadda' Calibrator!!!!!!

For some time now, we have been hearing some rumblings about the accuracy and reproducibility of the AN/UDM-2 RADIAC Calibrator Set to support tactical calibrations of Army RADIAC within an adequate tolerance, specifically the AN/VDR-2 RADIAC Set.

We decided to do a characterization study to find out what's going on. We packed up some calibrated AN/VDR-2 RADIACs and went out to the Defense Distribution Depot in Susquehanna, PA, which is where depot stock of the AN/UDM-2 is located. How did we perform the study, you ask? We started by calibrating thirty-six AN/UDM-2s with the VDR-2s. We chose thirty-six UDM-2s to support the 95% confidence level we were seeking. After the thirty-six UDM-2s were calibrated we started calibrating AN/VDR-2s right out of depot stock. At the end of this calibration frenzy we performed a total of 108 each calibrations.

The results of this study reveal that when a calibrated

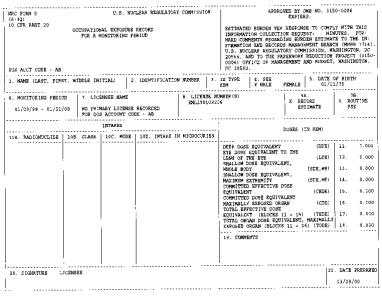
AN/UDM-2 is used to calibrate an AN/VDR-2, there is less than a plus/minus 5 percent error in the reproducibility, which provides for much greater calibration accuracy than the allowed plus/minus 30 percent tolerance. **WOW!!!!** You can't beat that with a stick…source ☺.

So to wrap it all up, using the AN/UDM-2 is a proven way to calibrate your "TACTICAL" AN/VDR-2s …... with accurate results!

HEY!! RSOs and Dosimetry Folks…!

Have you been getting some rather peculiar looking forms sent to you? Maybe something that looks a lot like this……?

NRC Form 5 (6-92) 10 CFR Part 20……



WELL……

DON'T THROW 'EM OUT!!

This is the ***NRC Form 5***, **"**Occupational Exposure Record for a Monitoring Period." This document is a record of the cumulative exposure for the previous calendar year for all personnel enrolled in your dosimetry program. Army Regulation 11-9, The Army Radiation Safety Program, and U.S. Nuclear Regulatory Commission (NRC) Regulation 10 CFR 20, Standards for Protection Against Radiation, require a copy of NRC Form 5 **MUST** be provided to each individual (along with the Annual Automated Dosimetry Report). You must also be able to prove that you provided each person with his or her own copy. We recommend that you have each individual write the following statement at the bottom of his NRC Form 5, "I have received a copy of this Form."

After the individual signs and dates the NRC Form 5, retain a copy for your records and give a copy to the individual. When your Dosimetry Program is reviewed (and it WILL be!) this is one of the items that will be looked at.

If you have any other questions about the NRC Form 5…. give us a call.

LOOK-OUT! VDR-2s…on the Way!

A new day has dawned at the CECOM calibration facility. How do we know? Aside from the fact that we've installed windows in the lab and we can finally see the daylight …….new personnel have arrived and another project is underway. Work has started on the modification and calibration of approximately 6,500 AN/VDR-2 RADIAC meters to be distributed to the ARNG. These instruments will be replacing the IM-174s and AN/PDR-27s you now have classified as "TACTICAL". They are being shipped to the states as

soon as they come off the production line.

There is a lot of hustle and bustle moving boxes here and there, (sorta' resembling UPS during the holidays), but the job is progressing smoothly. We have signed on a few good folks to do the modifications and all the calibrations. In fact, our crew has been counting AN/VDR-2s, instead of sheep, to fall asleep at night. We have shipped approximately 1,000 units to date. Completion of the job is expected in about 6 months…... (that's 60 months in sheep years).

A FORM…… is a FORM…… is a FORM…..!

In an effort to make your job easier, (and we must confess, ours too!) we have prepared a new form in which to submit your CAM, M43A1, ICAM and ACADA leak tests to our laboratory for analysis. This new form is attached to this issue of the RADCO register. The new form, which we will refer to as THE FORM, (brilliant, aren't we!!) is a two-sided document that has space for 35 leak test samples. Once THE FORM is completed, all you need to do is put the corresponding sample number from THE FORM on your leak test sample (we request you put it on the plastic bag or the cap of the Liquid Scintillation Counting (LSC) vial). We would like you to use THE FORM for all future leak test samples. You may still use the DODRATTS 80 column format if you desire, but hey.…why would you want to?

And don't forget, we highly recommend that you perform a wipe test of the "kraft paper" after maintenance has been performed for the shift or day. That wipe test sample is sent to our laboratory on a different form, (not to be confused with THE FORM) the Wipe Test Analysis Request Form (WTARF), revised May 2000. When you get the results of the WTARF back from us, you'll have, for your records, a copy of the maintenance area contamination survey you've just performed.

PS: If you want an electronic copy of THE FORM or the DODRATTS 80 column format, check our website or call our laboratory, they'll get a copy to you.

PPS: The actual name of THE FORM is the CECOM Radiological Engineering Laboratory Leak Test Analysis Request Form for the CAM; ICAM; M43A1 CAD; and the ACADA, ……..now you can see why we call it THE FORM ☺!

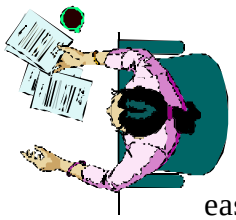
To DMIL or NOT To DMIL…..That is the QUESTION!

For whether it is nobler to suffer the slings and arrows of outrageous misfortune like having your radioactive items returned to you from the DRMO……

Quite often, we are contacted by the field for disposition/demilitarization (DMIL) instructions on a wide assortment of commodities that contain radioactive materials. The reason for this is that the Defense Reutilization and Marketing Offices (DRMO) will not accept any item for turn-in that has been assigned a DMIL code of "F" without written DMIL instructions. That's right!! DRMOs WILL NOT accept any item that is shown to have contained a radioactive component unless the component has been safely removed for disposal as radioactive waste and your

Radiation Safety Officer certifies on the turn-in document that the item is free of radioactive material/ contamination. Written disposition instructions must also accompany the item.

If you are planning to turn-in any radioactive item to your local DRMO, you must first request disposition instructions from the item manager. If they determine that the item is to go to your local DRMO, you'll receive disposition and DMIL instructions. If you do not receive those instructions, contact the item manager directly. He/she is patiently awaiting your phone call….they live for this kinda' stuff!!



To make your turn-in lives a little easier, we plan to provide you, in future issues of the RADCO, with a few disposition **do's and don'ts** for those typical items that get turned-in. You know, things that tend to pile up in your warehouses like the IM-174/PD RADIAC meters and the AN/GRC-50 V3 Radio Sets. So pay attention or you may in deed suffer the slings and arrows of having a DRMO return document sent to your immediate attention.

PUZZLES & BRAIN-TEASERS……

QUICKIE QUIZ:

1. Situation: You have performed a quarterly contamination survey of your fire control maintenance bench and storage area. You have completed the Wipe Test Analysis Request Form in order to mail the wipe test samples to the CECOM lab for analysis. The correct date on the current form is:

a. October 1999
b. May 2000
c. May 1997
d. March 2000

2. Situation: Your AN/VDR-2 RADIAC set has a radioactive check source attached to the side of the meter, this was recently attached when it was in for calibration at the CECOM calibration facility. The new calibration interval for an "ACTIVE" AN/VDR-2 with the dedicated check source is:

a. 270 days
b. 360 days
c. 180 days
d. 90 days

3. Situation: The RADIAC meter in question #2 above, has passed the calibration void date listed on the DA label 80, and you must ship the RADIAC meter with the check source back to CECOM for calibration. What is the correct DOT subtype for this shipment?

a. Type A
b. Type B
c. Limited Quantity
d. Instruments & Articles

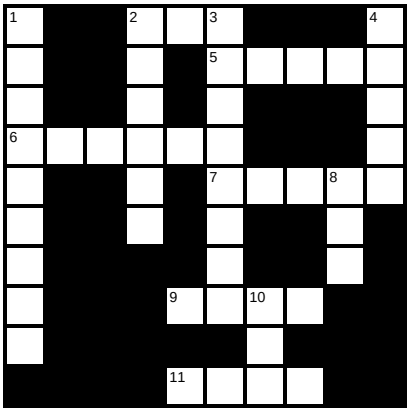
4. The ACADA contains _____ identical, _____ millicurie, _____ sources of radioactive material.

a. 3, 10, Ni-63
b. 2, 20, Ni-63
c. 3, 20, Ni-63
d. 2, 10, Ni-63

5. The leak test frequency for the M88 detector, a component of the ACADA, is:

a. annually
b. biennially
c. quarterly
d. no longer required

CROSSWORDS for RSOs



Across:

2 Electronic record of occupational exposure

5 Type of radiation

6 ADRs get this from the RSO

7 Radiation Safety Philosphy(ACRONYM)

9 Particle of low energy

11 _____ of Federal Regulations

Down:

1 Survey frequency for radioactive material storage areas

2 RADIACS must be labeled "_____"

3 Operation Support Command (OSC) mission

4 Most penetrating type of radiation

8 Responsible for Radiation Safety Program

10 Type of dosimeter

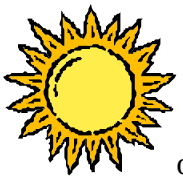
GOOD LUCK: …the answers are on the last page!!

NONIONIZING CORNER ……

"BIOEFFECTS" from RADIOFREQUENCY (RF) RADIATION

Last RADCO, we found out where to look for RF leaks and how to use various indications and certain types of test equipment to alert us to the possible existence of RF leaks. This time, we're going to focus on the biological effects of RF radiation exposure or simply put… the "***BIOEFFECTS***" of RF radiation.

When humans are exposed to RF radiation (a form of non-ionizing radiation) there are primarily two classifications of effects, **thermal** (heat related) and **athermal** (non-heat related). Let's begin by discussing the thermal effects.



Too much heat is dangerous for ***any*** living organism, including their components such as the skin or tissue. Most of us would agree that human tissue would suffer ill effects if exposed to higher than normal temperatures for prolonged periods of time. This is particularly true if those higher temperatures are in the vicinity of 106 degrees Fahrenheit. By "prolonged" we mean that the time of the exposure is long or excessive. If the heat energy added to (or absorbed by) human tissue is not removed quickly enough, the cells in the tissue may begin to die off.

Say, just what does "exposure" involve anyway? Well jeez Louise, we're glad you asked!

Exposure essentially involves two main elements or factors. They are the **magnitude** (or how large of an exposure) and the **time**. Take, for example, the following analogy. You're in a restaurant and you're

waiting for your meal to be served. The waiter has placed a candle on the table in the hopes that

the flame may mesmerize you into forgetting how long it is taking to get your meal. Before you know it, you're passing your hand over the flame and feeling it's warmth. Provided you move your hand quickly over the flame you feel only a small temperature rise. If, however, you move your hand more slowly, the heat energy added to your hand would be substantial and you begin to sense a great deal of warmth and if you stop momentarily, right over the flame, it isn't long before you burn your hand……
OUCH!! Where's that waiter with my food!!

Next time we'll begin where we left off….. by discussing how the body reacts to excess heat energy.

QUICKIE QUIZ SOLUTIONS:

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d. Instruments & Articles

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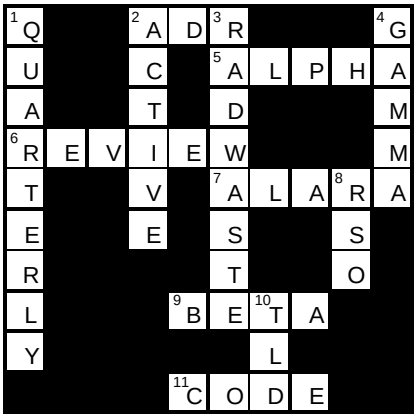
c. quarterly
d. no longer required

CROSSWORDs for RSOs

SOLUTIONS



…….see you next R A D C ☺!

CECOM Radiological Engineering Laboratory

Leak Test Analysis Request Form for the CAM; ICAM; M43A1 CAD; and the ACADA

Mail samples to:

Commander
U.S. Army CECOM
Attn: AMSEL-SF-RE (LAB)
Building 2540, Charles Wood Area
Fort Monmouth, NJ 07703-5024

Send test results to:

_____
_____
_____
_____
_____

POC:_____

Phone: (DSN)_____ (Comm)_____
Fax: (DSN)_____ (Comm)_____

E-mail:_____

Leak Test Date:_____

Reporting Activity DODAAC: _____ **Testing Activity DODAAC: W81JF3**

Sample No.	DODAAC Owning Unit	Cell / Module S/N * Z16 / Z47 / Z03 / Y14-M	Detector / Monitor S/N * Z16 / Z47 /Z03 / Y14-D
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

* Please CIRCLE the Applicable Prefix Z16 (CAM); Z47(ICAM); Z03(M43A1); or Y14 (ACADA)(M88)

CECOM Radiological Engineering Laboratory

Leak Test Analysis Request Form for the CAM; ICAM; M43A1 CAD; and the ACADA

Sample No.	DODAAC Owning Unit	Cell / Module S/N * Z16 / Z47 / Z03 / Y14-M	Detector / Monitor S/N * Z16 / Z47 /Z03 / Y14-D
12.			
13.			
14.			
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32.			
33.			
34.			
35.			

* Please CIRCLE the Applicable Prefix Z16 (CAM); Z47(ICAM); Z03(M43A1); or Y14 (ACADA)(M88)